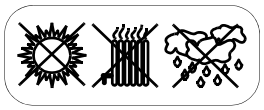
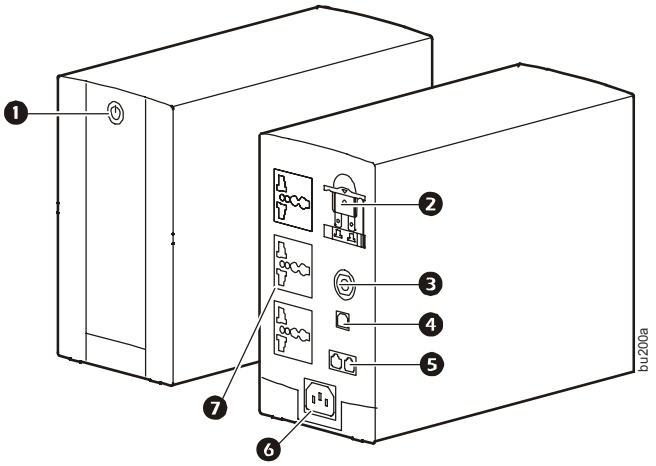
Back-UPS 650 VA 230 V with AVR (BX650CI-AS)

Overview



Do not install the unit in direct sunlight, in areas of excessive heat or humidity, or in contact with fluids

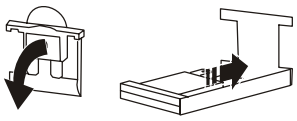
1. ON/OFF button
2. Battery connector
3. Circuit breaker
4. USB port
5. Tel/Network ports
6. Input power outlet
7. Battery and surge protected outlets



Setup and Installation

Connect the battery

Pull the battery connector handle down, and then push it into the unit.



Connect the equipment to Battery Backup+Surge Protection Outlets

Connect equipment to the BATTERY BACKUP + SURGE PROTECTION outlets.

These outlets provide backup power to the connected equipment during power outages. The Back-UPS must be turned ON in order to supply backup power. These outlets also provide protection to the connected equipment from power surges or spikes, even if the Back-UPS is turned OFF. Connect a computer, monitor, modem or other critical devices you want to stay powered during outages or utility problems into these outlets.

Connect the power cord

Connect the Back-UPS power cord to the outlet on the back of the unit and to a wall outlet. Do not connect the power cord to a surge protector or power strip. The outlet should be near the equipment and easily accessible.

Connect the telephone cord

Connect a phone line from the wall jack to the IN outlet on the UPS. Then, connect a phone, fax machine, or modem to the OUT outlet on the UPS using a phone cable.

Turn on the power to the unit

Press the ON/OFF button on the front of the unit. The unit will emit a single, short “beep” and the green POWER ON indicator will illuminate to confirm that the unit is on and is providing power protection.

To provide maximum runtime, the Back-UPS should charge for at least 10 hours. The unit is being charged whenever it is connected to utility power, even if the unit is OFF.

PowerChute® Personal Edition Software

Overview

Use PowerChute Personal Edition software to configure the UPS settings.

- Protect your computer and other equipment during a power outage. During a power outage, PowerChute will save any open files on your computer and safely shut it down. When power is restored, it will restart the computer.
- Configure the UPS to use features such as power-saving outsets, shutdown configuration, and alarms.
- Monitor the UPS for power usage and power events.

Note: PowerChute is only compatible with a Windows operating system. If you are using a Mac OSX, use the native shutdown feature to protect your system. See the documentation provided with your computer.

Installation

Use a USB cable to connect the Data port on the rear panel of the UPS to the USB port on your computer.

If the Back-UPS came with a PowerChute CD, insert the CD into your computer and follow the on-screen instructions

If the Back-UPS did not come with a PowerChute CD, go to www.apc.com and download the software free of charge.

Transfer Voltage and Sensitivity Settings

Automatic Voltage Regulation

This Back-UPS unit has Automatic Voltage Regulation (AVR). If the input utility voltage drops below a level that is safe for the operation of the connected equipment, the unit will boost utility voltage up to safe level. It will also compensate for high input utility voltage by lowering it to a level that is safe for the connected equipment.

The Back-UPS will switch to battery power if the input voltage level becomes too low for the Automatic Voltage Regulation to compensate, or if the utility power is distorted.

No-load Shutdown

If the UPS is operating on battery power and detects that the connected equipment is using less than 15 W of energy for more than 15 minutes, it will shut down to conserve energy.

When the UPS is reconnected to utility power, the UPS will automatically switch on.

Note: Even if the UPS is OFF, it is still protecting connected equipment from power surges.

Adjust the settings

If the Back-UPS switches to battery power too frequently or too infrequently, adjust the transfer voltage and sensitivity settings:

1. Ensure the battery is connected and that the Back-UPS is OFF, but connected to utility power.
2. Press and hold the ON/OFF button until the LED repeatedly flashes.The unit is now in Program Mode.
3. Release the button. The LED will indicate the current setting by flashing once, twice, or three times per second, and emitting audible beeps.
4. Press ON/OFF within two seconds to change the setting. Continue pressing the button until the desired setting is reached. If the button is not pressed within five seconds, the Back-UPS will exit the Program Mode.

LED Flashing	Audible Indicator	Transfer Voltage Setting	Input Voltage Range	No-load Shutdown	Description
Once per second	None	Low	140-300	Disabled	The Back-UPS will switch to battery power less often. Use this setting for equipment that is not sensitive to low or high level voltage levels or minor voltage waveform distortions.
Once per second	4 beeps per second	Low	140-300	Enabled	The Back-UPS will switch to battery power less often. Use this setting for equipment that is not sensitive to low or high level voltage levels or minor voltage waveform distortions.
Twice per second	None	Medium	140-300	Disabled	Use when the input utility power is normal, without any fluctuation in voltage levels.
Twice per second	4 beeps per second	Medium (factory default)	140-300	Enabled	Use when the input utility power is normal, without any fluctuation in voltage levels.
Three times per second	None	High	150-290	Disabled	The Back-UPS will switch to battery power during any small fluctuation in voltage. Use this setting for equipment that is sensitive to low or high level voltage levels or minor voltage waveform distortions.
Three times per second	4 beeps per second	High	150-290	Enabled	The Back-UPS will switch to battery power during any small fluctuation in voltage. Use this setting for equipment that is sensitive to low or high level voltage levels or minor voltage waveform distortions.

Status Indicators

LED	Audible Alarm	Condition
On	Off	**On-line** - The Back-UPS is supplying utility power to the connected equipment
	Constant Tone	**On Line Overload** - The power being used by the connected equipment has exceeded the capacity of the unit. Disconnect some equipment
	Constant beeping	**Over-temperature Warning -** The unit is overheating and will shut down if the temperature is not lowered. Disconnect some of the connected equipment.
On (Off during 4 beeps)	4 beeps repeated every 30 seconds	**On-Battery** - The Back-UPS is supplying battery power
Flashing	Rapid Beeping (every 1/2 second)	**Low Battery Warning** - The Back-UPS has 2 minutes of runtime remaining
	Constant tone	**Bad Battery Detected** - The battery needs to be charged, or is at end of life. (See *Battery Replacement.)*
	Chirp every 2 seconds	**Charger Warning** - The Back-UPS has experienced an internal problem, but is still providing power to the connected equipment. Contact APC Technical Support
Off	Short beep every 4 seconds	**Low Battery Shutdown** - During On Battery operation the battery power was almost completely exhausted, and the Back-UPS is waiting for utility power to return to normal
	Constant Tone	**On Battery Overload** - The connected equipment requires more power than provided by the Back-UPS battery. Unplug devices one at a time to remove overload. If the problem is not corrected, contact APC Technical Support
	Constant Tone	**Charger Fault** - Back-UPS has an internal problem, and is no longer powering the load. Contact APC Technical Support
	Constant Tone	**Temperature Fault -** The Back-UPS has overheated and has shut down.

Troubleshooting

Problem	Probable Cause	Solution
Back-UPS will not turn on.	The circuit Breaker has tripped.	Disconnect some of the equipment that is plugged into the BATTERY BACKUP + SURGE PROTECTION outlets. Reset the circuit breaker.
	Utility power is not available at the wall outlet.	Check if the circuit breaker for the wall outlet has been tripped, if it has, reset the breaker.
Connected equipment loses power.	The Back-UPS is overloaded.	Ensure that the equipment plugged into the unit is not overloading the capacity of the unit. Try disconnecting some of the equipment one device at a time, and see if the problem continues.
	The Back-UPS has exhausted its available battery power.	The unit can only operate on battery power for a limited amount of time. The unit will eventually turn off when the available battery power has been used. Allow the unit to recharge for 10 hours before continuing to use the unit.
	The equipment connected to the Back-UPS does not accept the step-approximated sine waveform from the unit.	The output waveform is designed for computers and computer-related equipment. It is not designed for use with motor-type equipment.
	The Back-UPS may require service.	Contact APC Technical Support for further troubleshooting.

Problem	Probable Cause	Solution
The ON/OFF button is lit, and the unit is beeping four times every 30 seconds, or it is emitting a constant tone.	The unit is using battery.	The unit is operating normally and using battery power. Save any current work, turn off all equipment, and turn the unit OFF. Once normal power is restored, turn the unit back ON, and turn on all equipment.
The On/Off button flashes once per ½ second, and the Back-UPS beeps once per second at the same time.	Battery capacity is low (there are about 2 minutes of runtime remaining).	The unit is about to shut down due to a low battery charge condition. When the unit beeps once every second, the battery has about 2 minutes of runtime remaining. Immediately power down your computer, and turn the unit OFF. When power returns to normal, the unit will recharge the battery.
Inadequate runtime.	The battery is not fully charged.	Allow the unit to charge by leaving it plugged in, and switched on for 10 hours.
	The battery is near the end of useful life.	As a battery ages, the amount of runtime available will decrease. Batteries also age prematurely if the unit is placed near excessive heat. If the battery will not charge, the Back-UPS is no longer operable.

Battery Replacement

The battery in the Back-UPS 650 is not user-replaceable. Contact APC Sales and Technical Support for a list of authorized service centers near you.

Specifications

Input	Voltage	230 VAC nominal
	Frequency	45-65 Hz
	Brownout Transfer	140 VAC, typical
	Over-voltage Transfer	300 VAC, typical
Output	UPS Capacity (total)	650 VA / 390 W
	Voltage On Battery	230 Vac rms (step-approximated sine wave)
	Frequency - On Battery	50 Hz ±1 Hz, 60 Hz ±1 Hz
	Transfer Time	6ms typical
Protection and Filtering	AC Surge Protection	Full time, 273 joules
	AC Input	Resettable circuit breaker
Battery	Type (maintenance-free)	12V, 7.2 AH
	Average Life	2 - 5 years depending on the number of discharge cycles and environmental temperature
	Typical Recharge Time	8 Hours
Physical	Net Weight	6.2 kg
	Dimensions (H x W x D)	20 cm x 11.5 cm x 25.7 cm
	Operating Temperature	0 ^{o}C to 40 ^{o}C (32 ^{o}F to 104 ^{o}F)
	Storage Temperature	-15 ^{o}C to 45 ^{o}C (5 ^{o}F to 113 ^{o}F)
	Operating Relative Humidity	0 to 95% non-condensing
	Operating Elevation	0 to 3000 m (0 to 10,000 ft)

Service

DO NOT RETURN Back-UPS to the place of purchase under any circumstances.

1. Consult the Troubleshooting section to eliminate common problems.
2. If you still have problems or questions, please contact APC via the internet or at one of the phone numbers listed below.
3. Before contacting APC, please be sure to record the date purchased, UPS model, and serial number (on bottom of unit).
4. Be prepared to troubleshoot the problem over the telephone with a Technical Support Representative. If this is not successful, the representative will issue a Return Material Authorization Number (RMA#) and a shipping address.
5. Pack the unit in its original packaging. If the original packaging is not available, ask APC Technical Support about obtaining a new set. Pack the unit properly to avoid damage in transit. Never use foam beads for packaging. Damage sustained in transit is not covered under warranty (insuring the package for full value is recommended).

Write the RMA# on the outside of the package.

Customer support and warranty information is available at the APC Web site, **www.apc.com**.

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